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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,242	12/22/2004	Yasushi Akiyama	2002JP311	2936

26289 7590 08/26/2005

AZ ELECTRONIC MATERIALS USA CORP.  
ATTENTION: INDUSTRIAL PROPERTY DEPT.  
70 MEISTER AVENUE  
SOMERVILLE, NJ 08876

EXAMINER
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WU, IVES J

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/519,242

Applicant(s)

AKIYAMA ET AL.

Examiner

Ives Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102/103*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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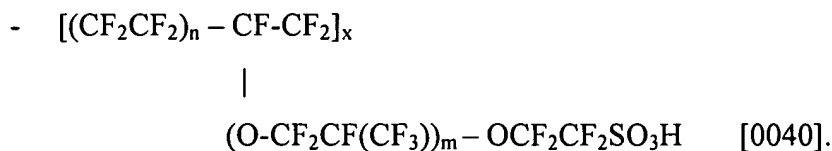
(1). Claims 1-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mineo et al (JP 08-044066, machine-translated).

Mineo et al disclose a surface antireflection coating compound containing water-soluble fluorine compound, water, ammonium salts, and alkyl carboxylic acid.

As to the components of a fluorine-containing polymer, an acid, an amine and aqueous solvent in an antireflective coating composition in **the independent claim 1**, Mineo et al disclose that the patentee's invention includes a water-soluble fluorine compound and water, [0011], line 8-9, a fluorination alkyl polyether carboxylic acid, [0011], line 7, as a nonmetallic ammonium salt, [0016], line 4. It is 2% or more still more preferably 1% or more preferably to total constituent weight, and is 5% or less. The polyvinyl alcohol and polyacrylic acid which are generally known, [0013], line 1-3.

As to the pH value of less than 7 in the anti-reflective coating composition in **the independent claim 1**, in view of the fact that Mineo et al disclose the fluorinated compound containing acid groups of polymers such as fluorination alkyl polyether carboxylic acid, fluorination alkyl polyether sulfonic acid and other acids used for surface acid-resisting spreading constituents to obtain the desirable refractive index between 1.27 to 1.3, [0008], line 1-2, it is therefore the examiner's position to believe that the anti-reflective coating composition compound of patentee's would inherently possess the pH value 7 or less. Since USPTO does not have proper means to conduct the experiments, it is now shift the burden to the applicant to prove otherwise, *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980)

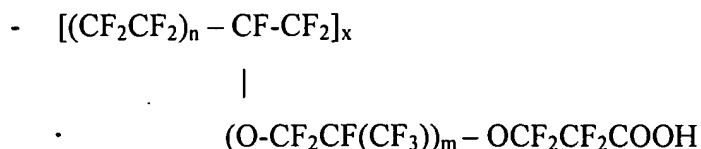
As to the limitation of **dependent claim 2**, Mineo et al disclose fluorination alkyl polyether carboxylic acid and fluorination alkyl polyether sulfonic acid, [0011]. Furthermore, Mineo et al disclosed the formula of fluorination alkyl polyether sulfonic acid as following:



Although Mineo et al do not disclose the formula for fluorination alkyl polyether carboxylic acid, based on the formula of fluorination alkyl polyether sulfonic acid disclosed by

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Mineo et al, and general formulas disclosed for polyether sulfonic group and polyether carboxylic group in [0014], it is reasonable to believe that the fluorination alkyl polyether carboxylic acid will have the similar formula:



which meets the structure of general formula (I) or both (I) and (II) of applicant's instant claim 2.

As to the limitation of **dependent claim 3**, Mineo et al disclose polyacrylic acid, [0013], line 3.

As to the limitation of **dependent claim 4**, Mineo et al disclose tetramethylammonium hydroxide, [0036], line 5.

As to the limitation of **dependent claim 5**, Mineo et al disclose water, [0011], line 9.

As to the limitation of **dependent claim 6**, Mineo et al disclose the method of exposing the photoresist coating wafer with the surface acid-resisting spreading film through a **test pattern** using g line stepper (GCA co. make; DSW-6700B) and performing for [PEB] 90 seconds at **120 degrees C on a hot plate**, the development omission **pattern** of 10-micrometer angle in light exposure and the 1-micrometer Rhine and tooth-space pattern with which the 1-micrometer Rhine and tooth space is finished in 1:1 were observed with the scanning electron microscope. [0043], line 1-6.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu

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Date: August 22, 2005

  
DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
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